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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,807	02/25/2004	Hui-Mei Chen	MEG02-005	3341
7590 GEORGE O. SAILE 28 DAVIS AVENUE POUGHKEEPSIE, NY 12603				
07/24/2008				
EXAMINER				
AU, BAC H				
ART UNIT		PAPER NUMBER		
2822				
MAIL DATE		DELIVERY MODE		
07/24/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/786,807

**Applicant(s)**

CHEN ET AL.

**Examiner**

Bac H. Au

**Art Unit**

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15, 17, 27, 30, 35 and 36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15, 17, 27, 30, 35 and 36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. Applicant's amendment dated April 10, 2008 in which claims 15, 17, 27 and 30 were amended, and claims 35-36 were added, has been entered.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 27, 30, and 36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The un-described subject matter is "a noble-metal layer".

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 15, 17, 27, 30 and 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dass (U.S. Pat. 6162652) in view of Chen (U.S. Pub. 2003/0006271) and Fan (U.S. Pat. 6956292).

Regarding claims 15, 17, 27, 30 and 35-36, Dass [Figs.7-17] discloses a method for fabricating a circuit component, comprising:

providing a semiconductor wafer [100; col.1 lines 10-12], a metal pad [110] over said semiconductor wafer, a passivation layer [115,120] over said semiconductor wafer, wherein an opening [125] in said passivation layer is over said metal pad, and a metal layer (bump) [150] over said semiconductor wafer; wherein said metal layer (bump) is connected to said metal pad through said opening; and

further comprising contacting said metal layer (bump) with a testing probe [Fig.17].

Dass fails to disclose the metal layer (bump) is made of gold; noble-metal. However, Chen discloses a metal layer (bump) made of gold; noble-metal; [307]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Chen into the method of Dass to provide a gold; noble-metal; layer (bump). The ordinary artisan would have been motivated to modify Dass in the manner set forth above for at least the purpose of having a material that is highly conductive and resistant to corrosion [Chen; para.2].

Dass discloses scrubbing said metal layer (bump) [Col.7 lines 59-67] to clean said metal layer, but fails to disclose ion milling the metal layer (bump). Chen discloses treating said gold; noble-metal; layer (bump) with a plasma using argon to clean said

gold; noble-metal; layer (bump), but fails to explicitly disclose ion milling said gold; noble-metal; layer (bump) using argon. However, Fan [Col.5 lines 12-14] discloses ion milling a metal layer to clean said metal layer; and wherein said ion milling comprises using argon. Because all three references teach methods of cleaning with ions, it would have been obvious to one skilled in the art to substitute one method for the other to achieve the predictable results of having an effective method of cleaning metal surfaces, particularly metal bumps.

#### ***Response to Arguments***

4. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bac H. Au whose telephone number is 571-272-8795.

The examiner can normally be reached on Mon-Fri 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on 571-272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2822

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/B. H. A./  
Examiner, Art Unit 2822

/Kevin M. Picardat/  
Primary Examiner, Art Unit 2822